

KARTA PRZEDMIOTU**I. Dane podstawowe**

Nazwa przedmiotu	Introduction to computer science
Nazwa przedmiotu w języku angielskim	Introduction to computer science
Kierunek studiów	Informatics, Mathematics
Poziom studiów (I, II, jednolite magisterskie)	I
Forma studiów (stacjonarne, niestacjonarne)	Full-time studies
Dyscyplina	Informatics
Język wykładowy	English

Koordinator przedmiotu/osoba odpowiedzialna	Michał Dolecki, PhD
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Forma zajęć (<i>katalog zamknięty ze słownika</i>)	Liczba godzin	semestr	Punkty ECTS
lecture	30	I	6 (INF)
classes	30	I	5(MAT)

Wymagania wstępne	Basic computer skills. Searching for information on the Internet.
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II. Cele kształcenia dla przedmiotu

Familiarize the students with the basics of structural programming in C++.
Presentation of the basic control statements.

III. Efekty uczenia się dla przedmiotu wraz z odniesieniem do efektów kierunkowych

Symbol	Opis efektu przedmiotowego	Odniesienie do efektu kierunkowego
WIEDZA		
W_01	The student formulates the scheme of the number conversion between different numerical systems. He knows how to construct the block diagram for a given problem.	INF: K_W03, K_W06 MAT: K_W01, K_W04
W_02	The student knows the syntax of C ++: the conditional statement and the loop instructions. He can design different elements of the application.	INF: K_W06 MAT: K_W01, K_W04
W_03	The student is able to present the syntax of the function, he knows the methods of passing parameters to the functions and knows how to present examples of their use.	INF: K_W03, K_W06 MAT: K_W01, K_W04
W_04	The student can present the definition of the array and the basic functions operating on the arrays.	INF: K_W03, K_W06 MAT: K_W01, K_W04
UMIEJĘTNOŚCI		
U_01	The student knows how to convert numbers between the different numerical systems.	INF: K_U04, K_U06, K_U08 MAT: K_U25
U_02	The student can write a program which solves the given problem. He can test the solution and rule out possible errors in his reasoning.	INF: K_U07, K_U08, K_U11 MAT: K_U25, K_U26, K_U27
U_03	The student can use variables of the different simple types, conditional statements, loops and arrays. He can improve the program by finding more efficient solution.	INF: K_U02, K_U08, K_U11, K_U17 MAT: K_U25, K_U26, K_U27
U_04	The student can create a function, select appropriate parameters and determine the result of the function	INF: K_U02, K_U04, K_U11 MAT: K_U25, K_U26, K_U27
KOMPETENCJE SPOŁECZNE		
K_01	The student is able to express his opinion and formulate a solution to the given problem. He is open to the new solutions. It cares about the readability of the application.	INF: K_K01, K_K02 MAT: K_K01
K_02	The student solves the given problems individually and while working in a group.	INF: K_K02 MAT: K_K01

IV. Opis przedmiotu/ treści programowe

Numerical systems.
 Block diagrams.
 Simple variable types.
 Data loading.
 Conditional statement if.
 Switch statement.
 For, while and do...while loops.
 Functions. Syntax and the use of a function, returning a result by the function, passing arguments to the function by value, and by reference.

Arrays and operations on arrays.

V. Metody realizacji i weryfikacji efektów uczenia się

Symbol efektu	Metody dydaktyczne (lista wyboru)	Metody weryfikacji (lista wyboru)	Sposoby dokumentacji (lista wyboru)
WIEDZA			
W_01	Conventional lecture / Guided practice	Exam/Written test	Examination card / written test
W_02	Conventional lecture / Guided practice	Exam/Written test	Examination card / written test
W_03	Conventional lecture / Guided practice	Exam/Written test	Examination card / written test
W_04	Conventional lecture / Guided practice	Exam/Written test	Examination card / written test
UMIEJĘTNOŚCI			
U_01	Practical classes	Exam/Written test	Examination card / written test
U_02	Practical classes	Exam/Written test	Examination card / written test
U_03	Practical classes	Exam/Written test	Examination card / written test
U_04	Practical classes	Exam/Written test	Examination card / written test
KOMPETENCJE SPOŁECZNE			
K_01	Discussion, PBL (Problem- Based Learning)	Exam/Written test	Examination card / written test
K_02	Discussion, PBL (Problem- Based Learning)	Exam/Written test	Examination card / written test

VI. Kryteria oceny, wagi...

To pass a course, the student has to attend a classes and has to pass the tests and the final exam.

- passing classes - colloquia (numerical systems, conditional statements, loops and functions) - 90% of the final grade, student's activity and work during classes - 10% of the final grade.

- written exam - for people who have passed the classes. The student may be discharged from the written part of the exam based on the result obtained on the exercises. Detailed conditions of exemption are given to students with each course edition.

Detailed assessment rules are given to the students with each edition of the course.

VII. Obciążenie pracą studenta

Forma aktywności studenta	Liczba godzin
Liczba godzin kontaktowych z nauczycielem	90
Liczba godzin indywidualnej pracy studenta	60

VIII. Literatura

Literatura podstawowa
B. Eckel, Thinking in C++, Prentice Hall; 2nd edition 2000 N. Dale, Ch. Weems, M. Headington, Programming in C++, 2nd ed., Jones and Bartlett Publishers, Sudbury 2000. N. Dale, Ch. Weems, M. Headington, Programming and Problem Solving with C++, 2nd ed., Jones and Bartlett Publishers, Sudbury 1999.
Literatura uzupełniająca
N. Wirth, Algorithms + Data Structures = Programs, Prentice-Hall 1976